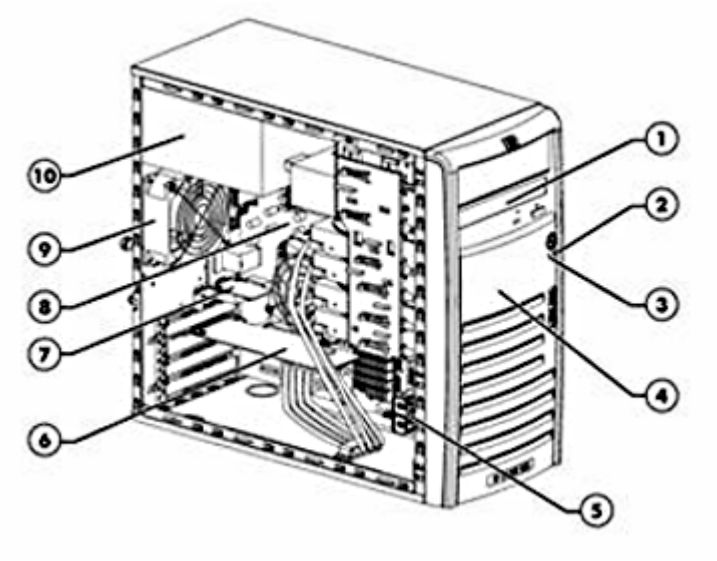
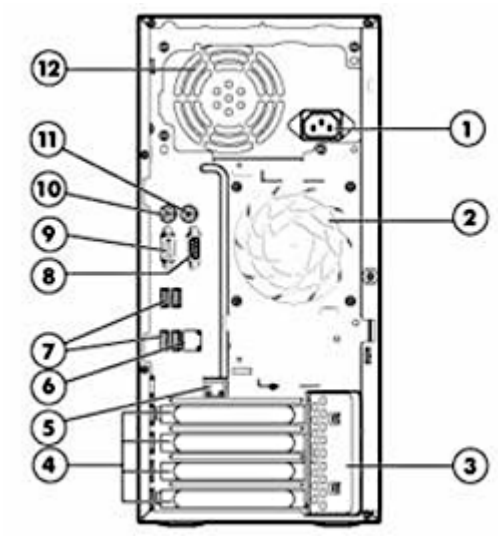
Overview





Front View:

1. DVD-ROM Drive
2. Power LED
3. Drive Activity LED
4. Front Bezel
5. Full Length Card Retainer
6. HDD Controller Card (Optional)
7. HP ProLiant100 G5 Lights-Out 100c Remote Management Card port (Optional)
8. System Board
9. Rear System Fan
10. 365W Power Supply

Rear View:

1. Power Supply Outlet
2. Rear System Fan
3. PCI Slot Cover Lock
4. PCI Slot Covers
5. HP ProLiant100 G5 Lights-Out 100c Remote Management Card port(Optional)
6. LAN Port (RJ-45)
7. Rear USB 2.0 Ports
8. Serial Port
9. VGA Port
10. PS/2 Keyboard Port
11. PS/2 Mouse Port
12. Power Supply Unit (PSU) Fan

What's New

- AMD Opteron ™ 1354 processor available in ready-built configuration

Overview

At A Glance

- Processor:
  - AMD Opteron™ processors Model 1300 series
  - AMD Opteron™ processors Model 1200 series
  - AMD Athlon™ processor Model 4450B
  - AMD Athlon™ processor Model 1640B
- Memory:
  - 512 MB or 1GB Standard/8 GB Maximum of PC2-6400 DDR2 Unbuffered ECC
- Storage Controller:
  - SATA Models: 4 Port SATA controller with Embedded RAID on Motherboard (RAID 0, 1, 5)
- Internal Drive Support:
  - 4 HDD Support:
    - 3.0TB SATA max storage (4 x 750GB)
    - 1.8TB SAS max storage (4 x 450GB)
- Network Controller:
  - Embedded NC105i PCI Express Gigabit Ethernet Server Adapter
- Expansion Slots:
  - Slot 1: PCI 32-bit/33MHz PCI at 3.3V
  - Slot 2: PCI-Express x1 connector with x1 link
  - Slot 3: PCI-Express x8 connector with x8 link
  - Slot 4: PCI-Express x16 connector with x16 link
- USB 2.0 Ports:
  - Eight (8) total USB Ports
    - 2 Front
    - 4 Rear
    - 2 Internal (one for tape, one for standard USB device)
- Management:
  - Standard Lights Out 100 IPMI 2.0 reporting
  - Optional HP ProLiant 100 G5 Lights Out 100c Remote Management Card
  - Standard HP ProLiant ML115 G5 Easy Set-Up CD
- Form Factor:
  - Micro ATX Tower (4U)
- Warranty:
  - This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners. Hardware diagnostic support and repair is available for one year from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. SATA hard drives have a one year warranty. SAS Enterprise drives have a three-year warranty.
    NOTE: Server Warranty includes 1 year Parts, 1 year Labor, 1-year on-site support with next business day response. (3-1-1 warranty offered in AP only, excluding Japan). Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Standard Features

NOTE: For a brief, printer friendly data sheet that describes this product and informs you of the essential capabilities and specifications, please visit: http://h18004.www1.hp.com/products/quickspecs/DS_00136/DS_00136.pdf

Processor One of the following depending on Model	**Quad-Core Processors** AMD Opteron™ Processor Model 1354 (2.2 GHz, 75W, 2MB) AMD Opteron™ Processor Model 1352 (2.1 GHz, 75W, 2MB) NOTE: Offered through Configure-To-Order only. See Factory Integrated Models section for more details. **Dual-Core Processors** AMD Opteron™ Processor Model 1222 (3.0 GHz, 95W, 2MB) NOTE: Offered through Configure-To-Order only. See Factory Integrated Models section for more details. AMD Opteron™ Processor Model 1218 (2.6 GHz, 95W, 2MB) NOTE: Offered through Configure-To-Order only. See Factory Integrated Models section for more details. AMD Athlon™ Processor Model 4450B (2.3 GHz, 45W, 1MB) NOTE: Offered through Configure-To-Order only. See Factory Integrated Models section for more details. **Single-Core Processors** AMD Athlon™ Processor Model 1640B (2.7 GHz, 45W, 512KB) NOTE: Offered through Configure-To-Order only. See Factory Integrated Models section for more details.
Cache Memory One of the following depending on Model	2MB Level 2 cache (AMD Opteron™ 1354, 1352, 1222, and1218 models) 1MB Level 2 cache (AMD Athlon™ 4450B models) 512KB Level 2 cache (AMD Athlon™ 1640B models)
Chipset	nVidia NFP3400
Memory Protection	ECC
Memory	Type: PC2-6400 unbuffered DDR2 ECC 800MHz Standard: 512 MB/1GB Maximum: 8 GB
Network Controller	Embedded NC105i PCI Express Gigabit Ethernet Server Adapter

Standard Features

Expansion Slots #	Technology	Bus Width	Connector Width	Bus Number*	Device Number	Form Factor	NOTES
1	PCI	32-bit	N/A	1	8	Full height slot	33MHz/3.3V
2	PCI-e	X1	X1	4	0	Full height slot	
3	PCI-e	X8	X8	2	0	Full length, full height slot	
4	PCI-e	X16	X16	12	0	Full length, full height slot	

*Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.
** Slots are enumerated differently based on OS. MS OS's enumerate from lowest to highest Device ID by bus (starting with the lowest bus).
*** Indicates the number of physical electrical lanes running to a PCI-e connector.
NOTE: PCI-X Interface (PCI 32bit/33MHz compatible)

Storage Controller	Integrated 4 port SATA controller with embedded RAID (0, 1, 5) NOTE: Embedded RAID setup instructions are located in the User Guide. CTO RAID set-up is not available. HP ProLiant ML100 Series Server User Guide: http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf		
Storage	Optical Drive	SATA DVD-ROM Drive	
	Hard Drives	160GB SATA 7200 rpm Drive	
Maximum Internal Storage	**Type**		
	Non-Hot Plug SAS	1.8TB	(4 x 450GB)
	Non-Hot Plug SATA	3.0TB	(4 x 750GB)
Interfaces	Parallel	0	
	Serial	1	
	Pointing Device (Mouse, PS2)	1	
	Graphics	1	
	Keyboard (PS2)	1	
	USB 2.0 Ports	8 total (4 rear, 2 front panel, 2 internal (one for USB Tape connectivity)) NOTE: Internal USB ports are optimal for the attachment of HP USB DAT Tape Drives NOTE: Please see the following URL for additional information regarding USB support: http://h18004.www1.hp.com/products/servers/platforms/usb-support.html	
	Network RJ-45 (Ethernet)	1	
	Management	HP ProLiant G5 Lights-Out 100c Remote Management port (Optional)	

Standard Features

Graphics	32MB shared supporting 1600x1200x16M resolution	
Form Factor	Micro ATX Tower (4U)	
Remote Management	Lights-Out 100c	Lights Out LO100c is a family of Remote Management Card (RMC) for ProLiant 100 series servers that do not have embedded LO100i. The LO100c has all the features of the LO100i Advanced license and allows customers, or their service providers, to remotely manage ProLiant servers over a LAN or the Internet from anywhere, anytime regardless whether the server is located in the same building, across town, or around the globe. With LO100c, users can acquire complete remote control with Virtual KVM (graphical hardware-based, remote console). Users can also access the server's serial console, control system power, update system firmware and software, as well as monitor system environmental conditions. The LO100c remote management card can be accessed from a web browser or command line interface. This virtual "at-the-server" functionality means administrators stay in control of remote HP ProLiant 100 series servers. The HP Lights-Out100c consists of a management processor and firmware that provides cost-effective, entry-level lights-out functionality, basic system board management functions, and diagnostics. NOTE: For more information, please refer to the QuickSpecs for the LO100c found at: http://h18004.www1.hp.com/products/servers/management/remotemgmt/lightsout100/index.html
Core Infrastructure Management	HP ProLiant ML115 G5 Easy Set-up CD	The HP ProLiant Easy Set-up CDs optimize single-server setup, providing a simple way to deploy reliable and consistent server configurations. The HP ProLiant 100 Series Easy Set-up CD ship standard with the ML115 G5. This CD offers essential single-server deployment tools for HP ProLiant 100 series servers that simplify HP entry server setup, providing a repeatable way to deploy reliable and consistent single-server configurations. The HP ProLiant Easy Set-up CDs assist with the OS installation process by preparing the system for installing "off-the-shelf" versions of Windows operating system software and automatically integrating optimized HP ProLiant server software drivers and utilities. Users enjoy the following benefits: • An easy-to-use, intuitive graphical interface that prepares your system for the OS installation process. • Integration of key server software drivers with assisted installation. • Dependency and validity checks to ensure that all supported ProLiant software can be installed. For the latest information about other related software; please visit the HP Insight Control Management Software Portfolio at: http://h18004.www1.hp.com/products/servers/management/ and the HP ProLiant Easy Set-up CD Web site at www.hp.com/servers/easysetup

Standard Features

	Subscriber's Choice	Subscriber's Choice Driver and Support Alerts/Notifications is a web-based email subscription service that provides software and driver change notifications for ProLiant products. Sign up at http://www.hp.com/go/subscriberschoice and customize your profile to receive various new alerts as they become available, on a weekly or monthly basis.
	ROMPaq software and latest drivers	The latest software, drivers, and firmware fully optimized and tested for your ProLiant server and options, available through download from the software and drivers website pages at http://www.hp.com/go/support.
Industry Standard Compliance	ACPI V2.0 Compliant PCI 2.3 Compliant PXE Support WOL Support IPMI 2.0 compliance	
Manageability	Standard Lights Out 100 1PMI 2.0 reporting Optional HP ProLiant G5 Lights-Out 100c Remote Management Card Standard HP ProLiant ML115 G5 Easy Set-Up CD	
Security	Power-on password Setup password USB lock	
Server Power Cords	6' country specific, lowline NEMA power cord.	
Power Supply	365 Watts	
System Fans	1 - Non-redundant system fan shipped standard 1 - Non-redundant CPU heatsink fan shipped standard	
Operating Systems and Virtualization Software	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/supportos and our driver download page http://www.hp.com/support/ML115G5	

Standard Features

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and/or storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging and custom packaging HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers, as well as, the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to http://www.hp.com/go/factory-express.

HP Enterprise Configurator

The HP eConfigure Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance.

Service and Support

HP Care Pack Services provide total care and support expertise with committed response designed to meet your IT and business needs.

HP Care Pack services include coverage for the HP branded hardware options qualified for the server that are purchased at the same time or afterward and internal to the enclosure. It also includes the 22" and smaller external monitors and tower UPS options up to 3kVA. These items will be covered at the same service level and for the same coverage period as the server. Coverage of UPS Battery is not included and standard warranty terms & conditions apply. For servers or storage systems installed within a rack, service also covers all HP qualified rack options installed within the same rack.

To fully capitalize on your HP ProLiant servers' capabilities requires a service partner who thoroughly understands your server technology and systems environment. HP Services, an industry leader in provision of multi vender support solutions provides a range of support services designed to meet the varying needs of business. Whether an SMB or large global corporation HP has a ProLiant server support offer to help you speedily deploy and maximize system uptime.

Recommended Service - Simplify ProLiant solution implementation, maintenance and management.

- Support Service -3 Year, 9x5 Next Business Day coverage, excluding HP holidays only
- Deployment Service - Hardware Installation only

Enhanced Service - Optimize service level to increase IT performance and availability

- Support Service - 3 Year 13x5 Same Business Day, 4-Hour response coverage
- Deployment Service - Installation and Start-up only

Installation & Start-Up of a ProLiant server and Microsoft or Linux O/S per the Customer Description and/or Data Sheet. To be delivered on a scheduled basis 8am-5pm, M-F, excl. HP holidays.
For a complete listing of service offerings and information visit:
http://www.hp.com/services/proliantservices
http://www.hp.com/go/proliant/carepack

Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

SATA Models

HP ProLiant ML115 G5 Opteron 1354, NHP-SATA (1P) 570335-xx1	Processor	(1) AMD Opteron™ 1354 (2.2 GHz, 75W, 2MB)
	Cache Memory	2MB Level 2
	Memory	1GB PC2-6400 ECC (DDR2-800MHz) (1 x 1GB)
	Storage Controller	HP Embedded 4 Port SATA Controller with Embedded RAID (0, 1, 5)
	Hard Drive	1x160GB NHP SATA HDD
	Internal Storage	Maximum 3.0TB (4 x 750GB) SATA
	Optical Drive	16x SATA DVD-ROM
	Form Factor	Micro ATX Tower (4U)

Country Code Key	xx=01	Australia
	xx=03	UK
	xx=04	Germany
	xx=05	France
	xx=20	Brazil
	xx=37	AP
	xx=42	Euro
	xx=AA	PRC
	xx=29	Japan
	xx=AB	Taiwan
	xx=AD	Korea

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on CTO product offerings and requirements.
NOTE: HP does not allow factory integration of options into standard models listed above.
Configure-to-order servers must start with a CTO Chassis.
NOTE: FIO indicates that this option is a Factory Installable Option.

Step 1: Base Configuration

Models	HP ProLiant ML115 G5 NHP CTO Chassis	457767-B21
	Factory Integrated Models ship with:	
	Embedded NC105i PCI Express Gigabit Ethernet Server Adapter	
	HP ProLiant ML115 G5 Easy Set-Up CD Keyboard and Mouse Power cord	
	Micro ATX Tower (4U)	
	NOTE: HP SATA Drive Models are limited to 3.0TB support.	
	NOTE: On SATA models with embedded RAID, setup instructions are located in the User Guide. CTO RAID set-up is not available. HP ProLiant ML100 Series Server User Guide: http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf	

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

Processors	**Quad-Core Processor**	
	AMD Opteron™ Processor Model 1354 (2.2 GHz, 75W, 2MB) Option Kit, FIO	490606-L21
	AMD Opteron™ Processor Model 1352 (2.1 GHz, 75W, 2MB) Option Kit, FIO	480294-L21
	Dual-Core Processor	
	AMD Opteron™ Processor Model 1222 (3.0 GHz, 95W, 2MB) Option Kit, FIO	480293-L21
	AMD Opteron™ Processor Model 1218 (2.6 GHz, 95W, 2MB) Option Kit, FIO	480292-L21
	AMD Athlon™ Processor Model 4450B (2.3 GHz, , 45W,1MB) Option Kit, FIO	480298-L21
	Single-Core Processors	
	AMD Athlon™ Processor Model 1640B (2.7 GHz, 45W, 512KB) Option Kit, FIO	480297-L21
Memory	2 GB Unbuffered PC2-6400 ECC DIMM (1 x 2 GB)	450260-B21
	1 GB Unbuffered PC2-6400 ECC DIMM (1 x 1 GB)	450259-B21
	512 MB Unbuffered PC2-6400 ECC DIMM (1 x 512 MB)	450258-B21

Configuration Information-Factory Integrated Models

Hard Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	SATA Non-Hot Plug Drives	
	HP 500GB 1.5G SATA 7.2K NHP 3.5" HDD, FIO	404469-B21
	HP 250GB 1.5G SATA 7.2K NHP 3.5" HDD	411276-B21
	HP 160GB 1.5G SATA 7.2K NHP 3.5" HDD	411275-B21
	SATA Non-Hot Plug Midline (MDL) Drives	
	HP 750GB 3G SATA 7.2K NHP 3.5" MDL HDD	462595-B21
	HP 500GB 3G SATA 7.2K NHP 3.5" MDL HDD	458941-B21
	HP 250GB 3G SATA 7.2K NHP 3.5" MDL HDD	458939-B21
	SATA Non-Hot Plug Entry (ETY) Drives	
	HP 160GB 3G SATA 7.2K NHP 3.5" Entry (ETY) HDD	458947-B21
	SAS Non-Hot Plug 3.5" Enterprise (ENT) Drives	
	400GB 3G NHP 10K 3.5" DP SAS ENT HDD	508232-B21
	450GB 3G NHP 15K 3.5" DP SAS ENT HDD	454234-B21
	300GB 3G NHP 15K 3.5" DP SAS ENT HDD	417950-B21
	146GB 3G NHP 15K 3.5" DP SAS ENT HDD	417855-B21
	300GB SAS 3.5" 15K NHP	431950-B21
	146GB SAS 3.5" 15K NHP	432093-B21
	72GB SAS 3.5" 15K NHP	432095-B21
Optical Drives	HP Half-Height SATA DVD ROM Kit	447326-B21
	HP Half-Height SATA DVD-RW Optical Kit	447328-B21

Step 3: Choose Additional Factory Integratable Options

NOTE: For additional options, please refer to the "Core Options and Additional Options" section below.
NOTE: Some options may not be factory integratable. Please contact your local sales representative for additional information.

Storage Controller	HP SC40Ge Host Bus Adapter, FIO NOTE: When using the SC40Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. NOTE: Factory Integrated Only.	449176-B21
Operating Systems	Pre-install Microsoft Windows 2003 SBS Standard Edition	
	MS W2003 SBS R2 Std 1XX FIO Eng SW	432564-xx1
	MS W2003 SBS R2 Prm 1XX FIO Eng SW	432566-xx1

Configuration Information-Factory Integrated Models

Country Code Key	xx=01	Australia
	xx=03	UK
	xx=04	Germany
	xx=05	France
	xx=06	Italy
	xx=07	Spanish
	xx=20	Brazil
	xx=21	Hungarian
	xx=22	Czech
	xx=24	Polish
	xx=33	Dutch
	xx=37	AP
	xx=42	Euro
	xx=AA	PRC
	xx=29	Japan
	xx=AB	Taiwan
	xx=AD	Korea

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options and Additional Options" section below.

NOTE: Some options may not be factory integratable. Please contact your local sales representative for additional information

Core Options

Memory	2 GB Unbuffered PC2-6400 ECC DIMM (1 x 2 GB)	450260-B21
	1 GB Unbuffered PC2-6400 ECC DIMM (1 x 1 GB)	450259-B21
	512 MB Unbuffered PC2-6400 ECC DIMM (1 x 512 MB)	450258-B21
Optical Drives	HP Half-Height SATA DVD ROM Kit	447326-B21
	HP Half-Height SATA DVD-RW Optical Kit	447328-B21
Hard Drives	NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.	
	3.5" SATA Non-Hot Plug Drives	
	HP 250GB 1.5G SATA 7.2K NHP 3.5" HDD	411276-B21
	HP 160GB 1.5G SATA 7.2K NHP 3.5" HDD	411275-B21
	NOTE: SATA drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/11940_div/11940_div.html (Worldwide)	
	SATA Non-Hot Plug Midline (MDL) Drives	
	HP 750GB 3G SATA 7.2K NHP 3.5" MDL HDD	462595-B21
	HP 500GB 3G SATA 7.2K NHP 3.5" MDL HDD	458941-B21
	HP 250GB 3G SATA 7.2K NHP 3.5" MDL HDD	458939-B21
	SATA Non-Hot Plug Entry (ETY) Drives	
	HP 160GB 3G SATA 7.2K NHP 3.5" Entry (ENT) HDD	458947-B21
	NOTE: SATA drives have a 1 year warranty. Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_div/13021_div.html (Worldwide)	
	SAS Non-Hot Plug 3.5" Enterprise (ENT) Drives	
	400GB 3G NHP 10K 3.5" DP SAS ENT HDD	508232-B21
	450GB 3G NHP 15K 3.5" DP SAS ENT HDD	454234-B21
	300GB 3G NHP 15K 3.5" DP SAS ENT HDD	417950-B21
	146GB 3G NHP 15K 3.5" DP SAS ENT HDD	417855-B21
	300GB SAS 3.5" 15K NHP	431950-B21
	146GB SAS 3.5" 15K NHP	432093-B21
	72GB SAS 3.5" 15K NHP	432095-B21
	Please see QuickSpecs for Technical and additional information: http://h18000.www1.hp.com/products/quickspecs/12244_div/12244_div.html (Worldwide)	

Core Options

Communications	HP NC110T PCI Express Gigabit Server Adapter	434905-B21
	HP NC360T PCI Express Dual Port Gigabit Server Adapter	412648-B21
	HP NC373T PCI Express Multifunction Gigabit Server Adapter	394791-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	

Additional Options

Remote Management	HP ProLiant 100 G5 Lights-Out 100c Remote Management Card NOTE: Supports HP ProLiant DL180 G5, ML110 G5, ML115 G5 and ML150 G5 servers, NOTE: For additional information on Lights-Out 100c Remote Management Card, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12468_div/12468_div.html	445513-B21
Storage Controllers	SAS HBA	
	HP SC44Ge Host Bus Adapter NOTE: When using the SC44Ge with SATA Hard Drives, 1.5G SATA Hard Drives are required. Transfer rate: 1.5 Gb/s SATA, 3 Gb/s SAS. NOTE: Supports RAID 0,1. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18004.www1.hp.com/products/quickspecs/12617_div/12617_div.html (SC44Ge HBA)	416096-B21
	Smart Array E200 Controller	
	HP Smart Array E200/128 BBWC Controller NOTE: Supports RAID 0,1,1+0, 5/BBWC. NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html (Smart Array E200 Controller) NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12460_div/12460_div.html (Smart Array E200 Controller) NOTE: SAS Storage Controllers supports both SATA and SAS drives. NOTE: On SATA models with embedded RAID, setup instructions are located in the User Guide. CTO RAID set-up is not available. HP ProLiant ML100 Series Server User Guide: http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf	411508-B21
	HP SAS/SATA 4-Port Cable NOTE: The purchase of a SAS Storage Controller requires the purchase of HP SAS/SATA 4-Port Cable (P/N 430479-B21)	430479-B21

Additional Options

Tape Drives	NOTE: Installation of SCSI internal tape drives in a ML115 G5 model requires SCSI controller kit (PN: 412911-B21).	
	NOTE: For complete listing of tape drive offerings see: http://www.hp.com/products1/storage/compatibility/tapebackup/ISS/index.html	
	USB Tape Drives	
	HP StorageWorks DAT 40 USB Internal Tape Drive (Carbonite)	DW022A
	HP StorageWorks DAT 72 USB Internal Tape Drive (Carbonite)	DW026A
	DAT SAS Tape Drives	
	HP StorageWorks DAT 160 SAS Internal Tape Drive	Q1587A
	DAT SCSI Tape Drives	
	HP StorageWorks DAT 40 SCSI Internal Tape Drive (Carbon)	C5686C
	HP StorageWorks DAT 72 SCSI Internal Tape Drive (Carbon)	Q1522B
	HP StorageWorks DAT 160 SCSI Internal Tape Drive (Carbon)	Q1573A
	LTO Ultrium SAS Tape Drives	
	HP StorageWorks LTO-2 Ultrium 448 SAS Internal Tape Drive	DW085A
Disk-Based Backup	RDX Removable Disk Backup	
	HP StorageWorks RDX160 Internal Removable Disk Backup System NOTE: 160GB of Disk Storage.	AJ765A
	HP StorageWorks RDX320 Internal Removable Disk Backup System NOTE: 320GB of Disk Storage.	AJ767A
	NOTE: Please see the HP RDX Removable Disk Backup System QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13036_div/13036_div.html	
	D2D Backup	
	HP StorageWorks D2D120 Backup System with Data Protector Express Software Kit NOTE: 2TB of Disk Storage.	EH924A
	HP StorageWorks D2D130 Backup System with LTO-3 Ultrium 920 SAS Tape Drive NOTE: 3TB of Disk Storage.	EH952A
	HP StorageWorks D2D2504i Backup System	EJ002A
	NOTE: Please see the HP D2D Backup Systems QuickSpecs for additional information: http://www.hp.com/go/d2d	

Additional Options

Uninterruptible Power Systems - Tower	HP T1000 G3 UPS	
	HP T1000 G3 UPS, INTL	AF449A
	HP T1000 G3 UPS, NA/JPN	AF448A
	NOTE: Please see QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12506_div/12506_div.html	
	HP T750 G2 UPS	
	HP T750 G2 UPS, INTL	AF447A
	HP T750 G2 UPS, NA/JPN	AF446A
	NOTE: Please see QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12192_div/12192_div.html	
	HP 1.83m 10A C13 CH Power Cord	AF565A
	HP 1.83m 10A C13 DK Power Cord	AF566A
	HP 1.83m 10A C13 EU Power Cord	AF568A
	HP 1.83m 10A C13 IL Power Cord	AF564A
	HP 1.83m 10A C13 UK Power Cord	AF570A
	HP 1.83m C13 IT/CL Power Cord	AF571A
	HP 2m C13 JPN Power Cord	AF572A
	HP Power Cord 2.5m 10A C13-Argentina	AF558A
	HP Power Cord 1.83m 10A C13-China	AF557A
	HP Power Cord 1.83m 10A C13-UL DOM	AF556A
Rack Kits	Monitor/Utility Shelf	253449-B21
	HP ProLiant Rack Enabling Kit	417705-B21
HP KVM Switch Options	HP 1x4 Console Switch	AF611A
	HP PS2 Server Console Cable, 6 foot, 2-Pack	AF612A
	HP USB Server Console Cable, 6 foot, 2-Pack NOTE: Required for supporting USB peripherals.	AF613A
	NOTE: For additional information regarding KVM Switches, Serial Console servers, rack mount monitors, keyboards and all related options please see the following URL: http://www.hp.com/go/kvm.	

Additional Options

USB Options	HP 1GB USB 2.0 Floppy Drive Key	442085-B21
	1.44MB External USB Floppy Drive	DC141B
	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP USB 04 Standard Keyboard	DT528A#xxx
	NOTE: When installing a Windows OS Environment and configuring the embedded SATA RAID, AHCI, or SAS controllers, installation of a driver from a diskette device is required. HP's 256MB or 1GB USB 2.0 floppy drive key (P/N: or 442085-B21) is required on the ML115 G5 to accomplish this operation. A USB drive key may not work to complete driver installation.	

Service and Support Offerings (HP Care Pack Services)	Extended Care - Minimum recommended service support level	
	Next Business Day On-Site Service, 9-Hour x 5-Day Coverage, 3 Years, Electronic	U4433E
	Committed Care - Cost-effective service options designed to extend HP Services committed response and guaranteed fix times, designed to speed problem resolution.	
	Same Business Day On-Site Server, 13-Hour x 5-Day Coverage, 3 Years, Electronic	U4434E
	Committed Response - Optimum service level to increase IT Performance and availability	
	4-Hour On-Site Service - 24-Hour x 7-Day Coverage, 3 Years, Electronic	U4435E
	Deployment Services - HP Installation and Start Up services designed to take time, risk, and worry out of the deployment of ProLiant servers - and free customers people to focus on what they do best, their business.	
	Hardware Installation, Electronic (install services)	U4444E
	NOTE: For more information, customer/resellers can contact http://www.hp.com/services/carepack.	

HP ProLiant ML115 G5 Models

NOTE: Memory configurations listed do not apply to "Factory Integrated Models".

Standard Memory

512 MB of PC2-6400 DDR2 SDRAM running at 800MHz with ECC capabilities memory installed (1 x 512 MB SDRAM DIMM)
1 GB of PC2-6400 DDR2 SDRAM running at 800MHz with ECC capabilities memory installed (1x 1 GB SDRAM DIMM)

Standard Memory Plus Optional Memory

Up to 5 GB memory is available with the optional installation of PC2-6400 un-buffered ECC DDR2 SDRAM DIMM Memory kits.

Standard Memory Replaced with Optional Memory

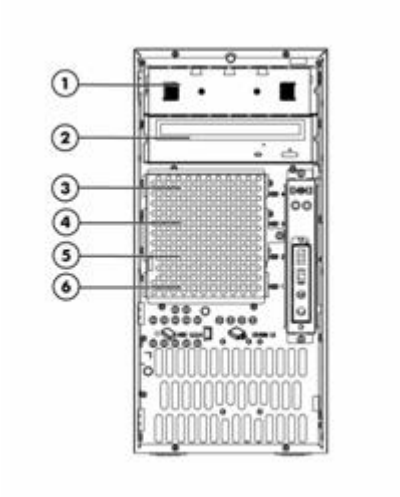
Up to 8 GB of memory is available with the removal of the standard 512 MB/1GB of memory and the optional installation of 4 x 2 GB PC2-6400 un-buffered ECC DDR2 SDRAM DIMM Memory kits.

NOTE: The below chart does not represent all possible memory configurations.
NOTE: For best performance, it is recommended that customers install memory in identical pairs. Slots 1A and 2A are interleaving pair. Slots 3B and 4B are interleaving pair.

Memory		Slot			
		1A	2A	3B	4B
Standard	512 MB	512 MB	Empty	Empty	512 MB
Optional	5 GB	512 MB	512 MB	2 GB	2 GB
Maximum	8 GB	2 GB	2 GB	2 GB	2 GB

Following are memory options available from HP:

2 GB Unbuffered PC2-6400 ECC DIMM (1 x 2 GB)	450260-B21
1 GB Unbuffered PC2-6400 ECC DIMM (1 x 1 GB)	450259-B21
512 MB Unbuffered PC2-6400 ECC DIMM (1 x 512 MB)	450258-B21



1	Removable Media Bays (1.6" each)
2	DVD-ROM
3, 4, 5, 6	Four (4) Non-Hot Plug Drive Bays

Drive Support

	Quantity Supported	Position Supported	Controller
Removable Media			
DVD Drive	2	1 or 2	Integrated SATA
DVD-RW Drive	2	1 or 2	Integrated SATA

Hard Drives (SATA Models only)

3.5" SATA Non-Hot Plug Drives

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

	Quantity Supported	Quantity Supported	Controller
500GB 1.5G SATA 7.2K 250GB 1.5G SATA 7.2K 160GB 1.5G SATA 7.2K	Up to 4	3-6	4 Port SATA controller with Embedded RAID on Motherboard (0,1,5)

3.5" SATA Non-Hot Plug Midline (MDL) Drives

	Quantity Supported	Quantity Supported	Controller
750GB 3G SATA 7.2K 500GB 3G SATA 7.2K 250GB 3G SATA 7.2K	Up to 4	3-6	4 Port SATA controller with Embedded RAID on Motherboard (0,1,5)

3.5" SATA Non-Hot Plug Entry (ETY) Drives

	Quantity Supported	Quantity Supported	Controller
160GB 3G SATA 7.2K	Up to 4	3-6	4 Port SATA controller with Embedded RAID on Motherboard (0,1,5)

Hard Drives (SAS Models only)

SAS Non-Hot Plug 3.5" Enterprise (ENT) Drives

	Quantity Supported	Position Supported	Controller
400GB 3G SAS 10K 450GB 3G SAS 15K 300GB 3G SAS 15K 146GB 3G SAS 15K	Up to 4	3-6	HP 8 Internal Port SAS HBA with RAID (0,1)

Maximum Storage Capacity

Internal	SATA	3.0TB (4 x 750GB)
	SAS	1.8TB (4x 450GB)

Tape Drives and Disk-Based Backup

NOTE: Installation of SCSI tape drives in a ML115 G5 model requires SCSI controller kit (PN: 412911-B21).
NOTE: For a complete listing of compatible tape and disk-based backup offerings, please visit: www.hp.com/go/connect.

	Position Supported	Controller	Controller/HBA Option Kit Part Number
Internal USB Tape Drives DAT 40 USB DAT 72 USB DAT 160 USB	2	USB 2.0 port	N/A
External USB Tape Drives DAT 40 USB DAT 72 USB DAT 160 USB	External	USB 2.0 port	N/A
Internal SAS Tape Drives DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS	2	HP SC44Ge Host Bus Adapter	416096-B21
External SAS Tape Drives DAT 160 SAS LTO-2 Ultrium 448 SAS LTO-3 Ultrium 920 SAS	External	HP SC44Ge Host Bus Adapter	416096-B21
Internal SCSI Tape Drives DAT40 DAT 72 DAT 160	2	HP SC11Xe Host Bus Adapter	412911-B21
External SCSI Tape Drives DAT40 DAT 72 DAT 160	External	HP SC11Xe Host Bus Adapter	412911-B21

Storage

HP StorageWorks RDX Removable Disk Backup System RDX160 RDX320	2	USB 2.0 Port	N/A
HP StorageWorks D2D Backup System D2D120 D2D130	External	Embedded Network Controller	N/A

Power Specifications

Part Number	457694-001
Operational Input Voltage Range (Vrms)	100 to 127 and 200 to 240 V auto ranging
Frequency Range (Nominal) (Hz)	50 to 60 Hz

Nominal Input Voltage (Vrms)	100	115	208	220	230	240
Max Rated Output Wattage Rating	N/A	365	N/A	N/A	365	N/A
Nominal Input Current (A rms)	N/A	6	N/A	N/A	3	N/A
Max Rated Input Wattage Rating (Watts)	N/A	553	N/A	N/A	517	N/A
Max. Rated VA (Volt-Amp)	N/A	N/A	N/A	N/A	N/A	N/A
Efficiency (%)	N/A	>65%	N/A	N/A	>65%	N/A
Power Factor	N/A	N/A	N/A	N/A	N/A	N/A
Leakage Current (mA)	0.5mA (at 60HZ)	N/A	N/A	N/A	N/A	N/A
Maximum Inrush Current (A peak)	N/A	No component was damaged and input fuse shall not blow	N/A	N/A	No component was damaged and input fuse shall not blow	N/A
Maximum Inrush Current duration (mS)	N/A	N/A	N/A	N/A	N/A	N/A

	Power**
HP ProLiant ML115 G5 Fully Configured	(see**)
Fully Loaded System output Wattage (W)	365W
Fully Loaded System Input Current (A rms)	6A @ 115V, 3A @ 230V
Fully Loaded System Thermal (BTU- Hr)	1885 BTU
Fully Loaded System VA (Volt-Amp)	N/A
System Leakage with all power supplies loaded (mA)	N/A
System Inrush Current with all power supplies loaded (A)	N/A
Power cord requirements	Nema 5-15P to IEC320-C13
	IEC320-C13 to IEC320-C14
	**Power shown is for a fully configured system consisting of (1) CPU, (4) double-sided DIMMs, (4) HDDs, (1) DVD-ROM, (4) PCI cards, and (1) power supply.
Power Cords (13 Cord Sets)	Power Cord Part Number
Country	
APD	100614-009, 100613-008, 139867-005, 397138-002 (India)
Brazil	285052-001
Australia	100661-001
Euro	100614-009
France	100614-009
Germany	100614-009
Japan	139867-005
PRC	286496-001
UK	100613-008
US	121565-001

System Unit	**Dimensions** (HxWxD) (with feet)	14.5 x 6.9 x 16.2 in (36.7x 17.5 x 41.2 cm)	
	Weight (approximate)	Maximum (all hard drives, power supplies, and processors installed)	31.35 lb (14.22 kg)
		Minimum (one hard drive, power supply, and processor installed)	25.75 lb (11.68 kg)
	Input Requirements (per power supply)	Rated Line Voltage	90 –- 132 VAC, 180 – 264 VAC
		Rated Input Current	6 A (at 110 VAC), 3 A (at 200 VAC)
		Rated Input Frequency	47 to 63 Hz
		Rated Input Power	365 W (at 100 VAC), 365 W (at 200 VAC)
	BTU Rating	Maximum	1885 BTU/hr (at 100 VAC), U/hr (at 200 VAC)
	Power Specifications	To review typical system power ratings use the Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficiency	
	Power Supply Output (per power supply)	Rated Steady-State Power	365 W (at 100 VAC), 365 W (at 200 VAC)
		Maximum Peak Power	385 W (at 100 VAC), 385 W (at 200 VAC
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
		Non-operating	10 to 90% relative humidity (Rh), 28°C 5 to 95% relative humidity (Rh), 38.7°C
	Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
		Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Acoustic Noise (Fully Loaded)	Idle	
		L WAd	4.74 BELS

		L pAm Operating	30.0 dBA
		L WAd	4.99 BELS
		L pAm	32.5 dBA
	Emissions Classification (EMC)	FCC Rating	Class B
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1
		NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.	

HP 160GB 3.0G SATA 7.2K NHP 3.5" HDD 458947-B21	160GB 7,200 rpm	Capacity	160,041 MB	
		Height Maximum drive dimension	1.0 in. (26.1 mm)	
		Width	4.0 in. (101.6 mm)	
		Depth Maximum drive dimension	5.787 in (147.0 mm)	
		Interface	Serial ATA	
		Transfer rate synchronous (maximum)	3Gb/s	
		Native Command Queuing	N/A	
		Seek time (typical reads, including settling)	Single track	2.0 ms
			Average	<11 ms
			Full-stroke	23.0 ms
			Rotational speed	7,200 rpm
		Physical Configuration	Bytes/Sector	512
			Logical Blocks	312,581,808
		Operating Temperature	41° to 131° F (5° to 55° C)	

Technical Specifications

16X Max SATA DVD-ROM Drive 447326-B21	Disk	Applicable Disk	CD-ROM, CD-XA, CD-DA (Mode 1, Mode 2, Form 1 and 2) Photo CD (Single and Multi-session) CD-R. CD-RW Mixed Mode (Audio and Data combined) DVD-ROM DVD-R/RW, DVD+R/RW CD-R
		Capacity	540MB (Mode 1, 12 cm) 650MB (Mode 2, 12 cm) 4.7 GB, 8.5 GB DVD
	Block Size	Mode 1	2,048 bytes (CD & DVD) 1024 bytes
		Mode 2	2,340 bytes, 2,336 bytes, 1024 bytes
		CD-DA	2,352 bytes
		CD-XA	2,328 bytes
	Interface	SATA	
	Access Times (typical)	Random	<100 ms
		Full-Stroke	<150 ms
	Data Transfer Rate	Sustained	3000 to 7200 KB/s (20X to 48X)
		Burst	150 KBps to 7,200 KBps
		Bus Rate	1.5Gbps
	Cache Buffer	128 KB	
	Start-up Time (typical)	< 7 seconds	
	Stop Time	< 4 seconds	
	Laser Parameters	Type	Semiconductor Laser GaA1As
		Wave Length	780 ± 25 nm
	Operating Conditions	Temperature	41° to 122° F (5° to 50° C)
		Humidity	10% to 90%
	Dimensions	(HxWxD, maximum)	1.63 x 5.75 x 7.87 in (41.3 x 146 x 195 mm)
		Weight	2.64 lb (1.2 kg)

Technical Specifications

4 port Embedded SATA controller	SATA Protocol	SATA 2, 3Gb/s
	SATA Ports	4 internal
	Port transfer rate	1.5 Gb/s total
	Maximum Capacity	up to 3.0TB (4 x 750GB non-hot plug SATA HDD)
	RAID Levels Supported	RAID 1+0 (Striping & Mirroring) RAID 1 (Mirroring) RAID 0 (Striping) RAID 5 (Striping with parity)
	Logical RAID Volumes Supported	NOTE: On SATA models with embedded RAID, setup instructions are located in User Guide, CTO RAID is set-up is not available. HP ProLiant 100 Series Server User Guide: http://h20000.www2.hp.com/bc/docs/support/SupportManual/c00260539/c00260539.pdf

Embedded NC105i PCIe Gigabit Server Adapter	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
	Data Transfer Method	Single lane (x1), 100MHz PCI Express Reference Clock	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	RJ-45 connector	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000Base-TX	Category 5 UTP; up to 328 ft (100 m)

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.